



## **Turbulence in magnetosheath for MMS observation based on the k-filtering method**

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Based on the measurements of plasma and fields made by MMS satellite, we studies the turbulences in the magnetosheath, particularly focusing on the ion kinetic scale fluctuations. The k-filtering method is developed for multi-point measurements, which allows us to determine locally the magnetic field energy distribution of a turbulence in space plasma. Given the frequency and the wave vector, the method provides a solution in the maximum likelihood sense. We have conducted the dispersion relation analysis using k-filtering method and compared the results with theoretical prediction. Combining the results of electromagnetic polarization and the relationship between density fluctuations and magnetic fluctuation, the wave mode is identified comprehensively.